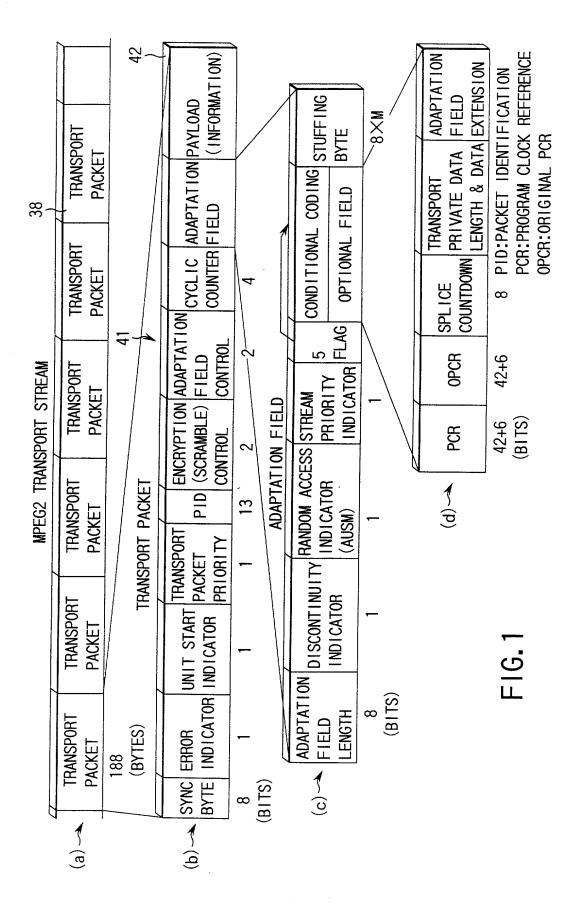
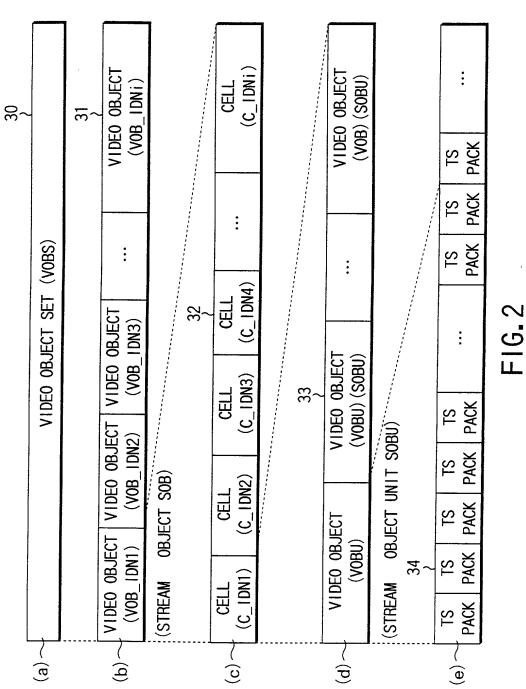
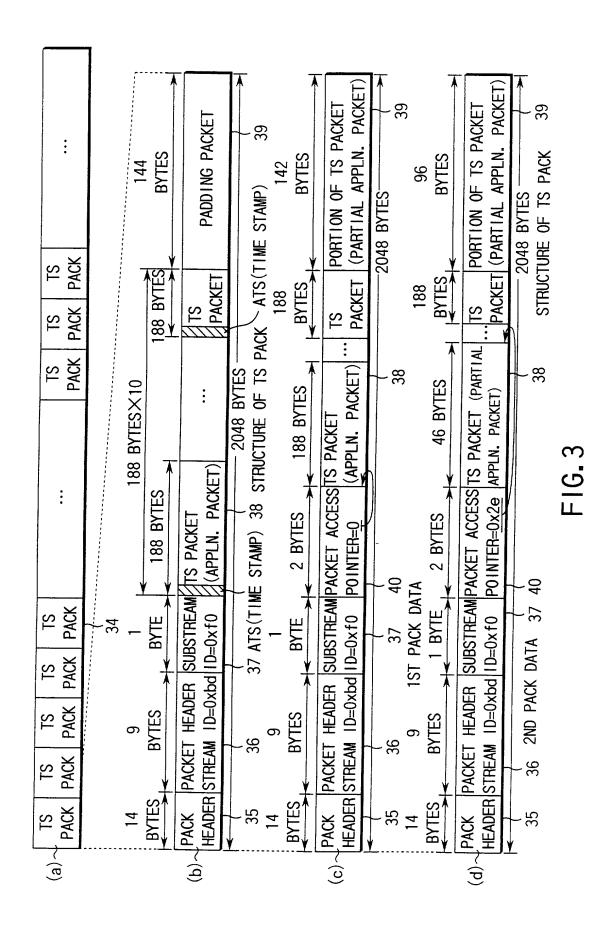
OBLON, SPIVAK, ET AL DOCKET #:204591US-2S DIV INV: HIDEO ANDO ET AL SHEET 1_ OF_30_



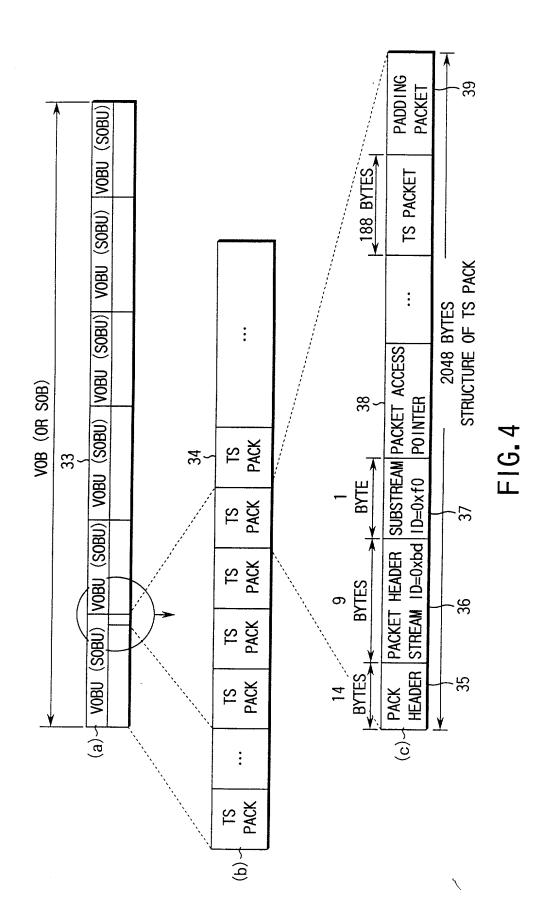
OBLON, SPIVAK, ET AL DOCKET #:204591US-2S DIV INV: HIDEO ANDO ET AL SHEET 2 OF 30



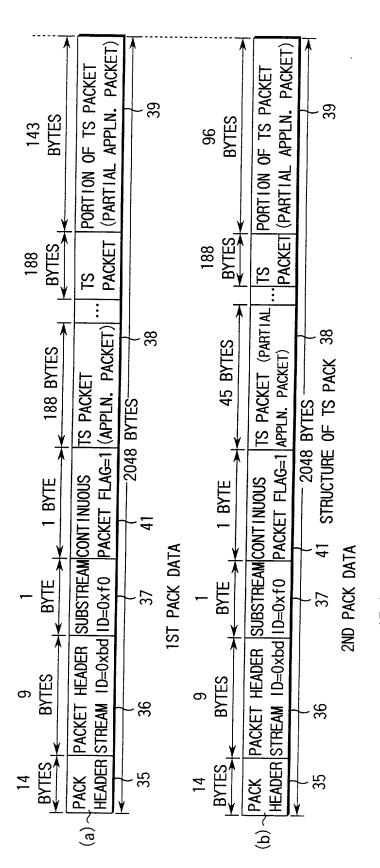
OBLON, SPIVAK, ET AL DOCKET #:204591US-2S DIV INV: HIDEO ANDO ET AL SHEET 3 OF 30



OBLON, SPIVAK, ET AL DOCKET #:204591US-2S DIV INV: HIDEO ANDO ET AL SHEET 4_ OF_30_



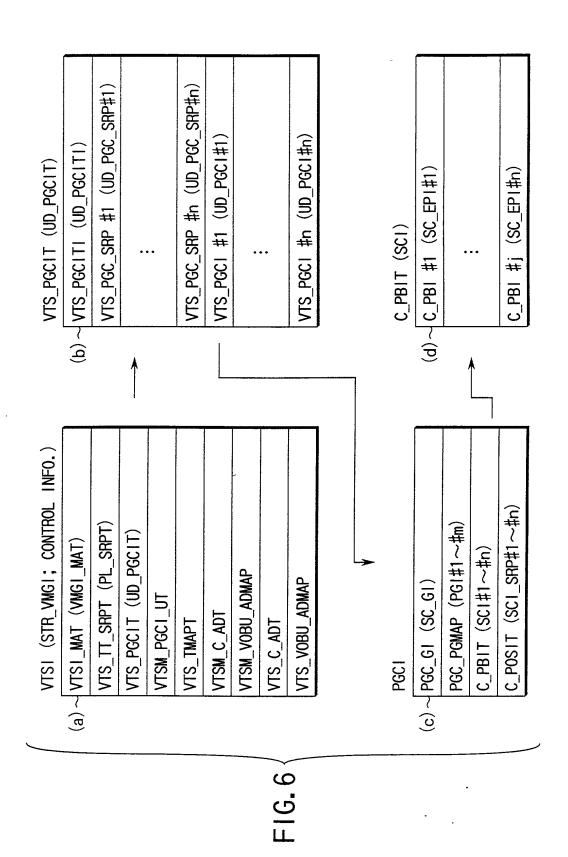
OBLON, SPIVAK, ET AL DOCKET #:204591US-2S DIV INV: HIDEO ANDO ET AL SHEET <u>5</u> OF 30



IF CONTINUOUS PACKET FLAG=1, TS PACKET EXTENDS ACROSS NEXT PACK (FROM 39 OF (a) TO 38 OF (b))

FIG. 5

OBLON, SPIVAK, ET AL DOCKET #:204591US-2S DIV INV: HIDEO ANDO ET AL SHEET <u>6</u> OF <u>30</u>



OBLON, SPIVAK, ET AL DOCKET #:204591US-2S DIV INV: HIDEO ANDO ET AL SHEET <u>7</u> OF <u>30</u>

	PGC_GI_(SC_GI)) 								
				CON	TENTS					
(a)	PGC_CNT	NUMBER	NUMBER OF PROGRAMS, NUMBER OF CELLS							
(a)	PGC_TRS_TM		RECORDING TIME PER PGC							
7	SUPPORT INFO	SUPPOR	T INFORM	MATION (I	DETAILS ARE	LISTED BELOW)				
	PGC_PGMAP_SA			OF PROG						
	C_PBIT_SA	START	ADDRESS	OF C_PB	ΙΤ					
	C_POSIT_SA START ADDRESS OF C_POSIT									
	ARCHIVE FLAG ERASE INHIBITION FLAG									
	(C_TY1 & TE) 0: FREE, 1: SAVE PERMANENTLY									
	SC_EPI_Ns				INFORMATIO	N				
	SOB_N	STREAM	OBJECT	NUMBER						
	SC_S_APAT	STREAM	CELL ST	ART APAT						
	SC_E_APAT	STREAM	CELL EN	ID APAT						
	if (TE=='10b') {									
	ERA_S_APAT									
	ERA_E_APAT	ERASE	END APAT	•						
i	b7 b5	b4	<u>b3</u>	b2	<u>b1</u>	b0				
(D)	IDENTIFICATION	202		PAT,	UNIT START	RANDOM				
	1	SCD SLIDBODT	PCR SUPPORT	PMT	INDICATOR	ACCESS				
i	DATA	SUFFUNI	SUFFURI	SUPPORT	SUPPORT	INDICATOR SUPPORT				
	OOM_ACCESS	_ S	TB IDENT	IFICATION	ON CODE					
	CATOR SUPPORT I OMNOT SUPPORTE		01:STB (10:Ver2	OF BS DIO	GITAL BROAD	CAST				
15	···SUPPORTED	0	11:Ver1	STB OF	DirecTV SKY PERFECT	TV				
SUPF	START INDICATO PORT FLAG	DR C	_TY1'0' F0	106' SHAL DRALL ST	L BE DESCR TREAM CELLS	IBED				
0b	···NOT SUPPORTE	р, т	E…'00b':	THIS CEL	L IS IN TH	Ë				
1b···SUPPORTED "NORMAL" STATE PAT, PMT_SUPPORT_FLAG '01b':THIS CELL IS IN "TEMPORARILY					RARILY					
	Ob···NOT SUPPORTED, ERASED" STATE; AND THIS CELL START 1b···SUPPORTED AFTER THE FIRST APPLICATION PACKET									
PCR	PCR SUPPORT FLAG OF A SOBU AND ENDS BEFORE THE LAST									
0b 1b	····NOT SUPPORTEI ····SUPPORTED		APPL	ICATION	PACKET OF	THE SAME SOBU				
SCD	SCD SUPPORT FLAG ERASED" STATE: AND THIS CFLI									
	Ob···NOT SUPPORTED, CONTAINS AT LEAST ONE SOBU 1b···SUPPORTED BORDER (FIRST OR LAST									
	PRESENTATION CL REFERENCE	OCK	APPL	ICATION	PACKET OF .	A				
	SPLICE COUNTDOW	/N			S_APAT AND XIT FOR TH	IS CELL				
			FIG							
			1 10	- /						

C_PBI (SCI)

OBLON, SPIVAK, ET AL **DOCKET #:204591US-2S DIV** V: HIDEO ANDO ET AL SHEET <u>8</u> OF <u>30</u>

	RBP		CONTENTS	NUMBER
	0 TO 0	C_CAT (C_TY)	CELL TYPE 02: STREAMER CELL	UF BITES
	1 TO 4	C_ARLTM	STC VALUE OR PCR UPON RECORDING HEAD OF CFIL OF INTEREST	
	5 TO 8	C_FV0BU_SA	START ADDRESS OF CELL	
	9 T0 12	C_LV0BU_SA	START ADDRESS OF LAST VORU OF CFLI	
	13 TO 16	C_LV0BU_EA	END ADDRESS OF LAST VOBU OF CELI	
	17 T0 18	TS PACKET LENGTH	TS PACKET LENGTH: NORMAL: 0xbc	
	19 T0 22	REFPIC_Ns (AU_Ns)	NUMBER OF 1-PICTURES	
	23 T0 26	REFPIC_SA_#1 (AUSM)	REFPIC_SA_#1 (AUSM) START ADDRESS OF I_PICTIJRF #1	
	27 T0 30	REFPIC_EA_#1 (AUEM)	REFPIC_EA_#1 (AUEM) END ADDRESS OF I_PICTURE #1	
=		•••		
	231(n-1) X8	BEEDIC CA #2 (AIICH)	TATAL ANDRESS OF 1 TO 1	
	27(1-1)70	DETTIC_SA_#N (AUSM)	237 (17) CO NETTIC SA #N (AUSM) START ADDRESS OF 1-PICTURE #N	
	Z/+(n-1) X8	REFPIC_EA_#n (AUEM)	Z/+(n-1) X8 REFPIC_EA_#n (AUEM) END ADDRESS OF I-PICTURE #n	,
			TOTAL	$30+(n-1)\times 8$
				01111100

REFPIC_NS: NUMBER OF I-PICTURES ("0" IF NO RANDOM ACCESS INDICATOR IS AVAILABLE) REFPIC_SA#n: ADDRESS OF TS PACK INCLUDING FIRST TS PACKET OF I-PICTURE #n

(TS PACK WITH ACTIVE RANDOM ACCESS INDICATOR)

REFPIC_EA#n: ADDRESS OF TS PACK INCLUDING LAST TS PACKET OF I-PICTURE #n

("0" IF NO UNIT START INDICATOR IS AVAILABLE) (TS PACK WITH ACTIVE UNIT START INDICATOR)

OBLON, SPIVAK, ET AL DOCKET #:204591US-2S DIV INV: HIDEO ANDO ET AL SHEET 9_ OF_30_

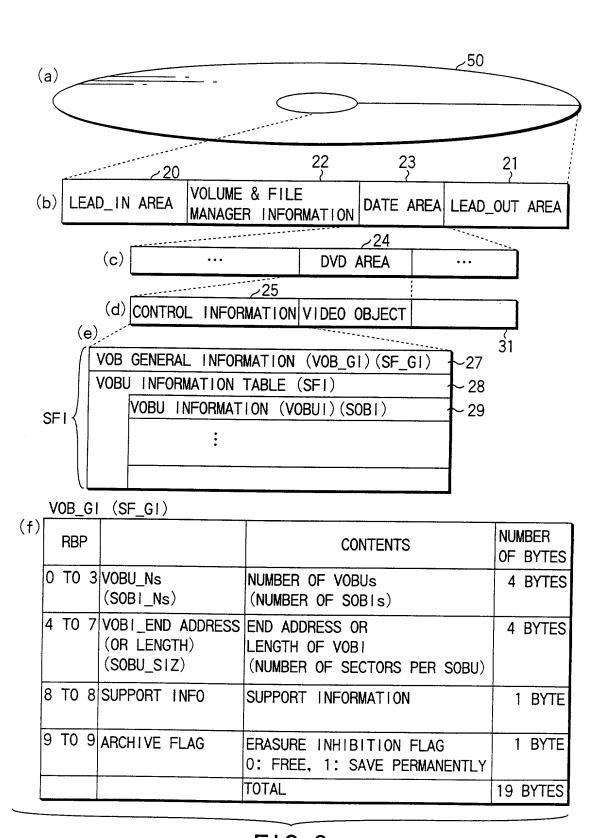


FIG.9

VOBU! (S0B1)

OBLON, SPIVAK, ET AL DOCKET #:204591US-2S DIV INV: HIDEO ANDO ET AL SHEET <u>10</u> OF <u>30</u>

REFPIC_Ns: NUMBER OF I-PICTURES ("O" IF NO RANDOM ACCESS INDICATOR IS AVAILABLE) REFPIC_SA#n: ADDRESS OF TS PACK INCLUDING FIRST TS PACKET OF I-PICTURE #n

(TS PACK WITH ACTIVE RANDOM ACCESS INDICATOR)

REFPIC_EA#n: ADDRESS OF TS PACK INCLUDING LAST TS PACKET OF I-PICTURE #n

(TS PACK WITH ACTIVE UNIT START INDICATOR) ("0" IF NO UNIT START INDICATOR IS AVAILABLE)

FIG. 10

OBLON, SPIVAK, ET AL DOCKET #:204591US-2S DIV INV: HIDEO ANDO ET AL SHEET 11_OF_30_

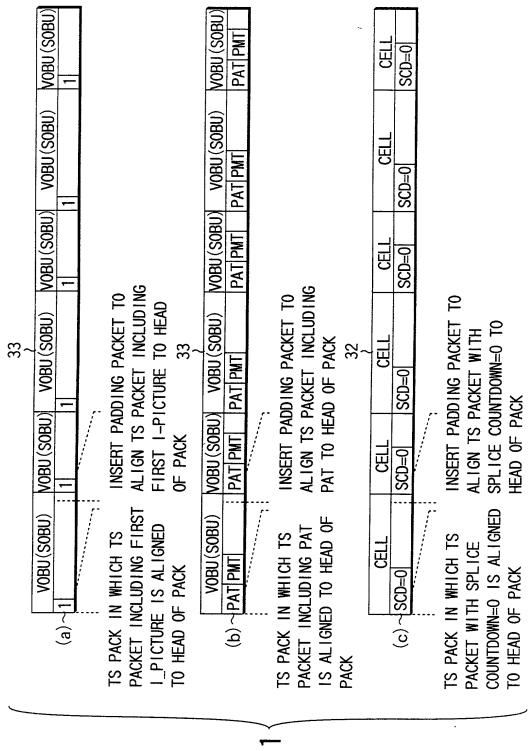


FIG. 1

OBLON, SPIVAK, ET AL KET #:204591US-2S DIV V: HIDEO ANDO ET AL SHEET <u>12</u> OF <u>30</u>

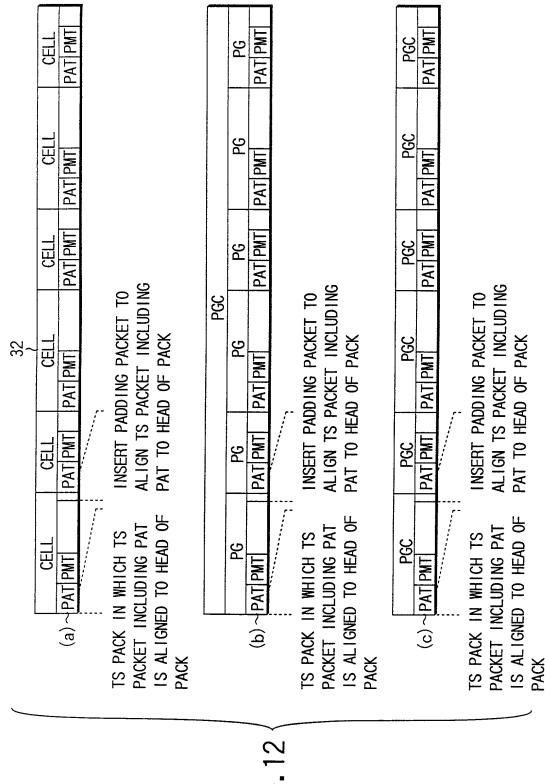
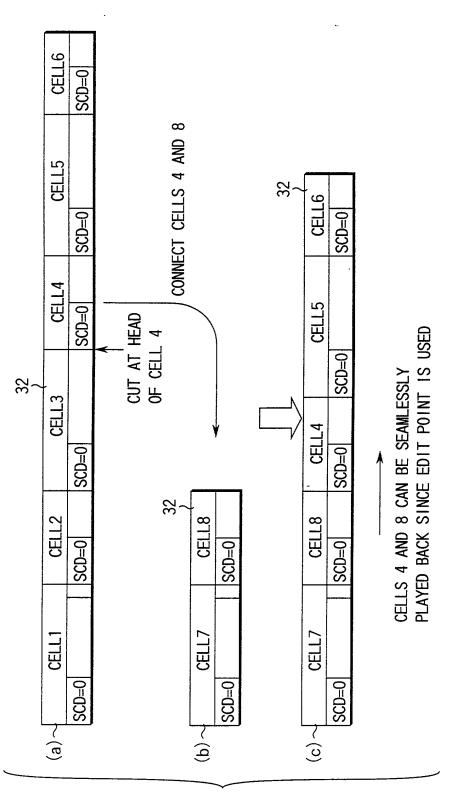


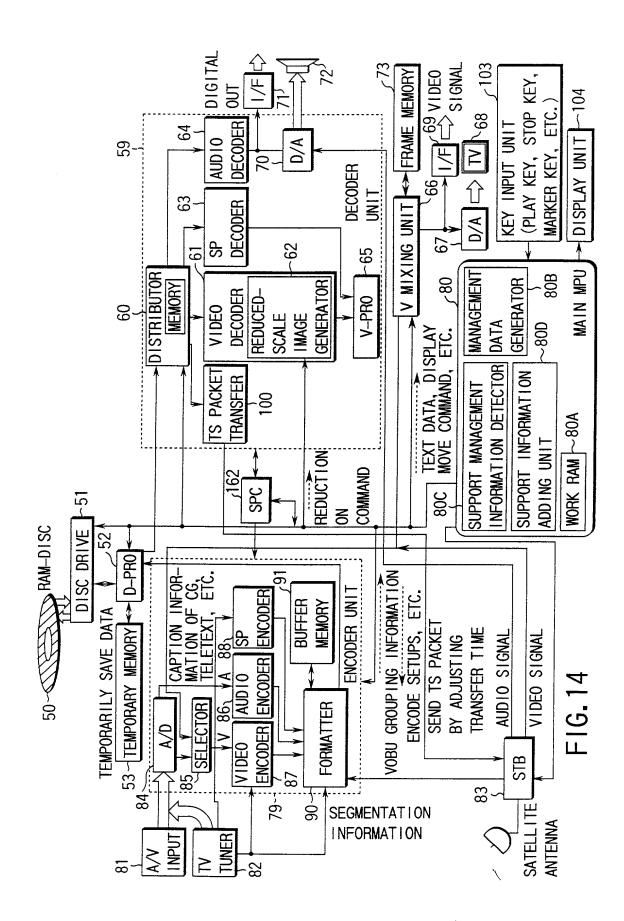
FIG. 12

OBLON, SPIVAK, ET AL DOCKET #:204591US-2S DIV INV: HIDEO ANDO ET AL SHEET 13_OF_30_

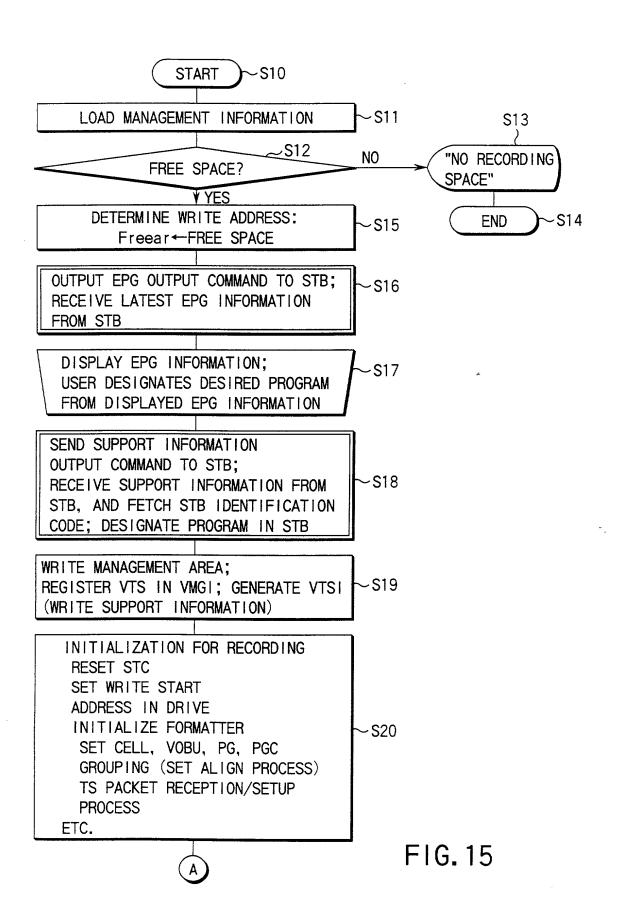


F16. 1

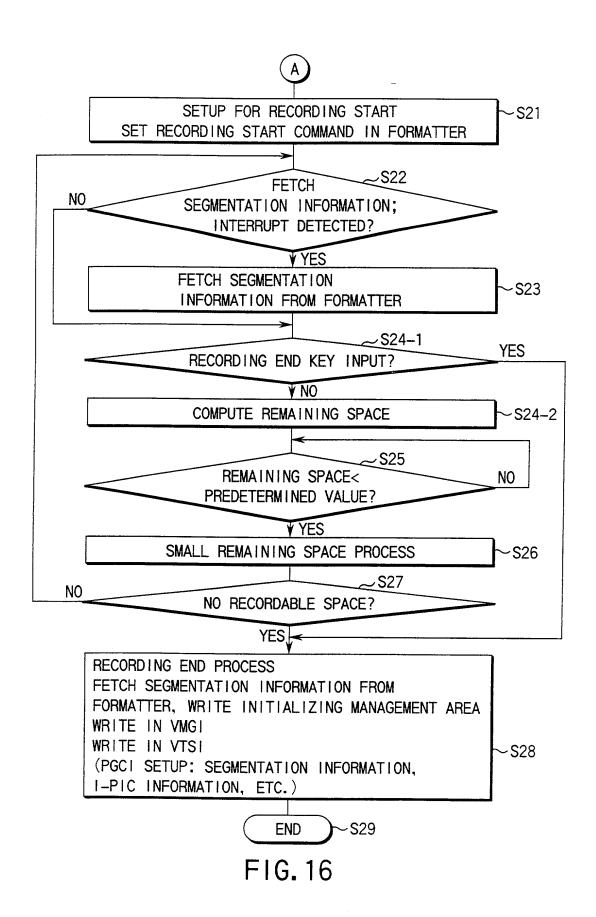
OBLON, SPIVAK, ET AL DOCKET #:204591US-2S DIV INV: HIDEO ANDO ET AL SHEET <u>14</u> OF <u>30</u>



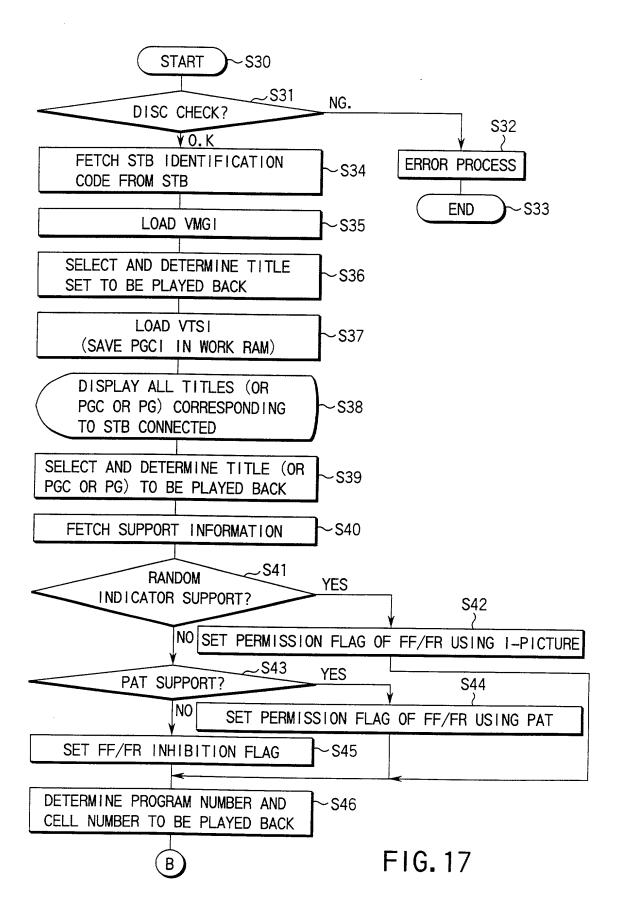
OBLON, SPIVAK, ET AL DOCKET #:204591US-2S DIV INV: HIDEO ANDO ET AL SHEET 15_ OF_30_



OBLON, SPIVAK, ET AL DOCKET #:204591US-2S DIV INV: HIDEO ANDO ET AL SHEET _16__ OF__30__



OBLON, SPIVAK, ET AL DOCKET #:204591US-2S DIV INV: HIDEO ANDO ET AL SHEET 17_ OF_30_



OBLON, SPIVAK, ET AL DOCKET #:204591US-2S DIV INV: HIDEO ANDO ET AL SHEET _18__ OF__30__

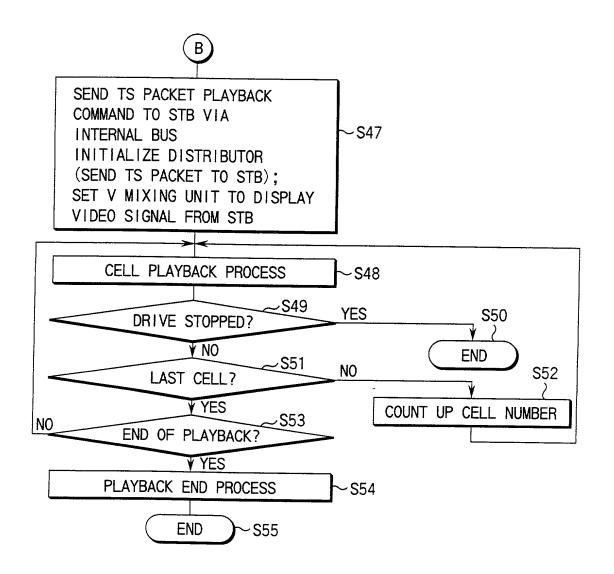
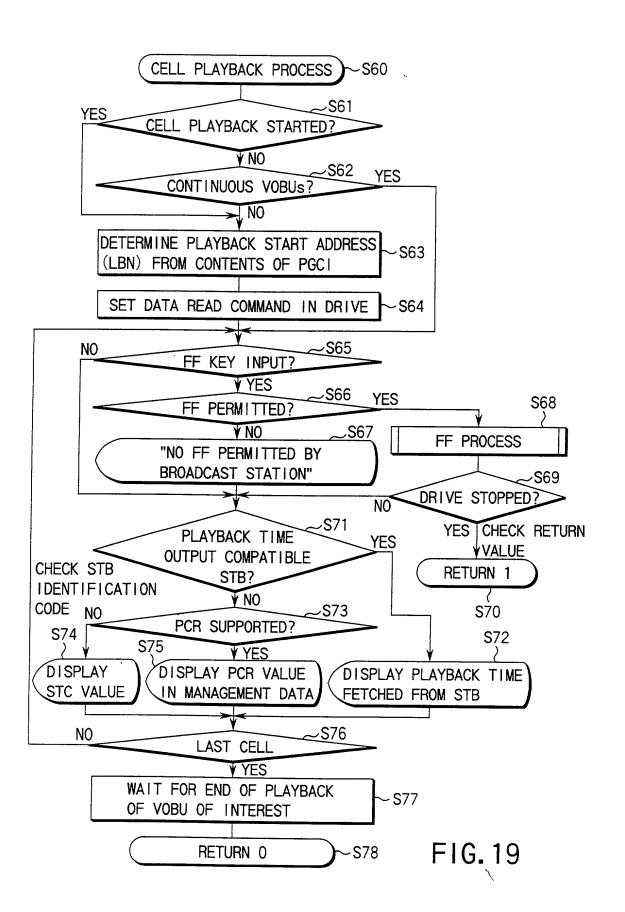
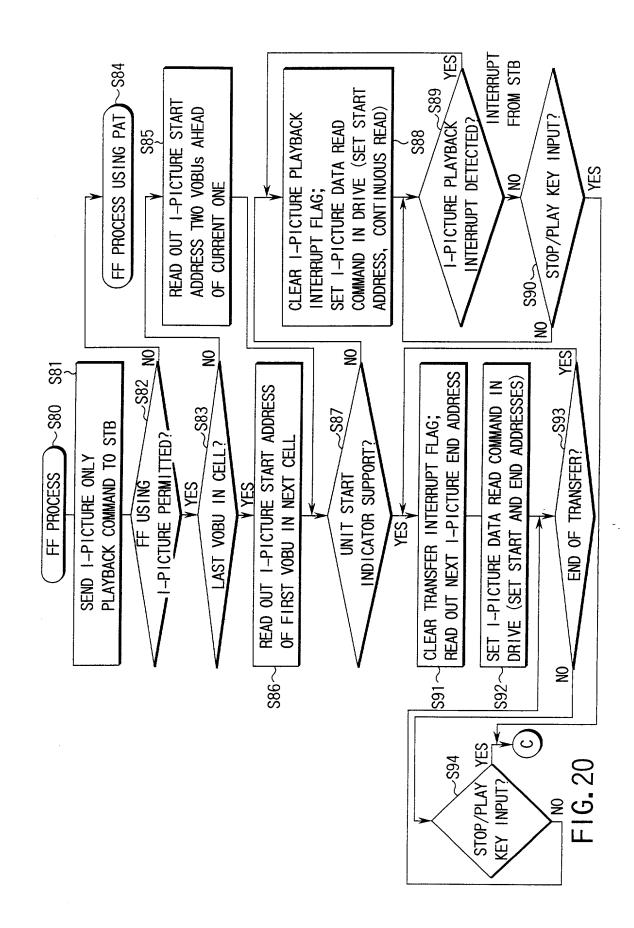


FIG. 18

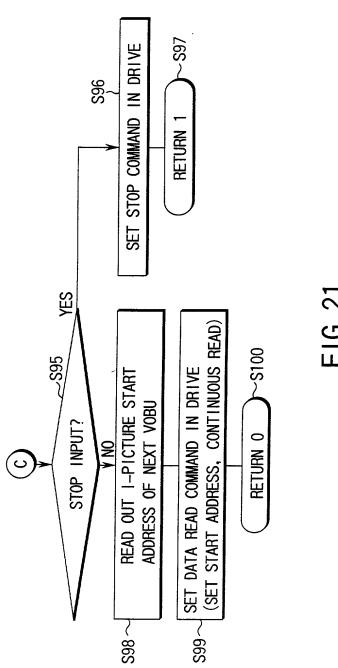
OBLON, SPIVAK, ET AL DOCKET #:204591US-2S DIV INV: HIDEO ANDO ET AL SHEET 19_ OF_30_



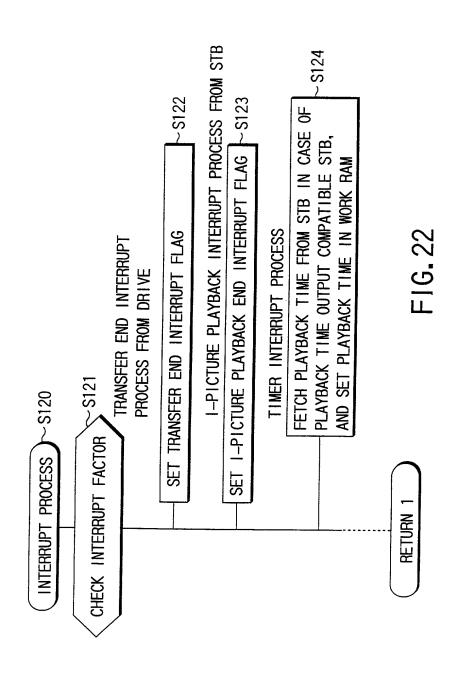
OBLON, SPIVAK, ET AL DOCKET #:204591US-2S DIV INV: HIDEO ANDO ET AL SHEET <u>20</u> OF<u>30</u>



OBLON, SPIVAK, ET AL DOCKET #:204591US-2S DIV INV: HIDEO ANDO ET AL SHEET _21__ OF__30__



OBLON, SPIVAK, ET AL DOCKET #:204591US-2S DIV INV: HIDEO ANDO ET AL SHEET <u>22</u> OF <u>30</u>



OBLON, SPIVAK, ET AL DOCKET #:204591US-2S DIV INV: HIDEO ANDO ET AL SHEET 23_OF_30_

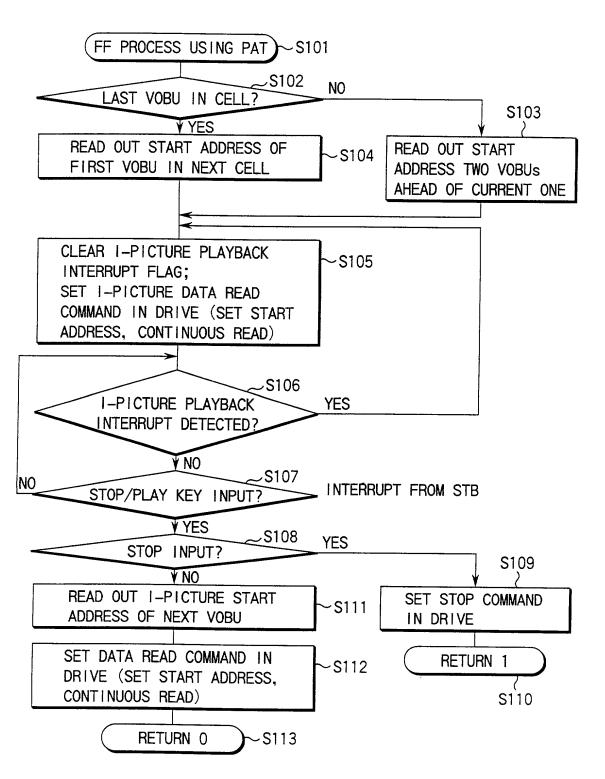


FIG. 23

OBLON, SPIVAK, ET AL DOCKET #:204591US-2S DIV INV: HIDEO ANDO ET AL SHEET 24 OF 30

	TIME-	TRANS-	TI	ME-	TRANS	5-	TIME	_ T	RANS	S-	TIM	Ξ-	TRANS-	7
(a)	STAMP	PORT	ST	AMP	PORT		STAN	NP P	0RT		STA	MP	PORT	
_	ATS	PACKET	TA	S	PACKE	T	ATS	P	ACKE	ΞŢ	ATS		PACKE	Ţŀ·
	a	а		b	b		d		d		f		f	┸
		T	/							 				
	i	TRANS-	1	1 1	TRANS	-	TRAN	S-		RAN	1	- 1	PADDII	٧G
(p)		PORT	STA	1 1	PORT		PORT	••	1 1	ORT	Į.	i	AREA	
_	ATS	PACKET	ATS		PACKE	T	PACK	ET ···	P/	ACK	ET 3	1	36	
	а	а	b		d		<u>d</u>]_	f				_
	D 4 014	DE0					<u></u>							
			l		TA PA		- 1		SEC		1	1	DAT	
(ć)		1			REA HE		1		1		AREA	ì	··· ARE	
_	1	6	HEAD	ER 2	(1)	2	7	,	HEA		22	'	23	3
	ļ		11						1	2		<u>L</u>		_
(d)	SECTOR	SECTOR			CECT	OD.	CECT	ND C	ГСТ	201			CECTO	<u>.</u>
(a)	NO. 0	NO. 1	' :		1		SECT(- 1		1	• • • •		SECTO	
	140.0	INO. I			NO. 1	5	NO. 16) 14	0.17				NO. 31	
	ECC B	LOCK	FCC I	BLOCK	FC	.C F	BLOCK	F	CC F	31.00	`K I		BLOCK	\supset
(e)	# a			B	,	#		-		seo. S			$\# \varepsilon$	`
<u>_</u>		REAM BL				*,		TRE			K #2		TI C	ᅱ
(f)											. , ,, _			-
(1)				STR	REAM (BJ	ECT #	A 29	98					٦
														_
, ,		REAM BL									K #2			black
(á)	ECC BI			BLOCK	EC		3LOCK	E			K E		BLOCK	
	# a		#.	ß		_ # ·	γ		# (δ			#ε	╛
	CECTOD	CECTOR			0507	<u> </u>	<u></u>	- 1						
(h)	SECTOR		•	• • •	1		SECTO	- 1	• • •	•			SECTO	
	NO.32	NO.33	• •		NO. 4	/	NO. 48		• • •	•	NO. 7	8	NO. 79	إ
-	PACK	PES		SECT()D			ATA		DAC	עי	Т	ADD I NO	\exists
(i)	HEADER		- 1		JN HEAD	ED	ł	ATA REA		PAC	DER	1	ADDING ACKET	'
)΄(3	8	-11		112	LN	"	24		Π .		P	40 40	
ι												<u> </u>	40	_
(j)[TRANS	PORT	END	CODE	РΔ	DDING	7	PF	S H	EADEF	} P	ADDINO	7
7		PACKE		1	32	ł	EA 37	1	-	9		- 1	REA 38	
,							_,, _,	J				17	- 1 U	<u> </u>

FIG. 24

OBLON, SPIVAK, ET AL DOCKET #:204591US-2S DIV INV: HIDEO ANDO ET AL SHEET 25_ OF_30_

(a)~	STREAM BLOCK HEADER 11										
(b)~	TRANSPORT PACKET INFOR- MATION 611		INFORM	M BLOCK MATION 12			SECTOR DATA HEADER INFORMATION 613				
(c)~	TRANSPORT PACKET INFOR- MATION 621	RECORD TIME 622	TRANSPORT PACKET ATTRI- BUTION 623	STREAM BLOCK	DIF	CK	FIRST ACCESS POINT 626	TRANSPORT SPACKET CONNECTION FLAG 627			
(d)~	NUMBER PACKET		NSPORT	l .		PORT PA 632	CKET M	IAPPING			
(e)~	I-PICTURE MAPPING TABLE 641	MAPPIN	CTURE POSITION IG TABLE 642	VIDEO PACKET MAPPIN TABLE	G	AUDIO PACKET MAPPINO TABLE 6	S S M	ROGRAM PECIFIC NFORMATION APPING ABLE 645			
				16 3) 5						

FIG. 25

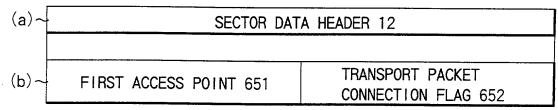


FIG. 26

CONSTRAINTS ON MPEG SPECIFICATIONS FOR SOB

SYSTEM HEADER	SHALL NOT BE INCLUDED
SCR VALUE IN THE FIRST PACK OF A SOB	ANY VALUE
MPEG PROGRAM_END_CODE	SHALL NOT BE INCLUDED
STREAM_ID	SHALL BE EQUAL TO BFh (PRIVATE_STREAM_2) IN ALL PES PACKETS

OBLON, SPIVAK, ET AL DOCKET #:204591US-2S DIV INV: HIDEO ANDO ET AL SHEET <u>26</u> OF <u>30</u>

STREAMER VIDEO MANAGER VIDEO MANAGER INFORMATION (STR_VMGI) INFORMATION STREAM FILE INFORMATION MANAGEMENT TABLE TABLE (SFIT) (VMGI_MAT) STREAMER PLAY_LIST SEARCH ORIGINAL PGC INFORMATION INFORMATION (ORG_PGCIT) POINTER TABLE (STRI) (PL_SRPT) USER DEFINED PGC INFORMATION TABLE (UD_PGCIT) TEXT DATA MANAGER (TXTDT_MG) APPLICATION PRIVATE DATA FIG. 28 MANAGER (APDT_MG)

STREAMER VIDEO
MANAGER INFORMATION
(STR_VMGI)

STREAM FILE INFORMATION
TABLE (SFIT)

ORIGINAL PGC
INFORMATION (ORG_PGCI)

USER DEFINED PGC INFORMATION
TABLE (UD_PGCIT)

TEXT DATA MANAGER (TXTDT_MG)

APPLICATION PRIVATE DATA
MANAGER (APDT_MG)

STREAM FILE INFORMATION
TABLE INFORMATION (SFITI)

STREAM OBJECT STREAM
INFORMATION #1 (SOB_STI #1)

:

STREAM OBJECT STREAM
INFORMATION #n (SOB_STI #n)

STREAM FILE INFORMATION
(SFI)

FIG. 29

STREAM FILE INFORMATION
TABLE INFORMATION (SFITI)
STREAM OBJECT STREAM
INFORMATION #1 (SOB_STI #1)
:
STREAM OBJECT STREAM
INFORMATION (SOB_STI #n)
STREAM FILE INFORMATION
(SFI)

STREAM FILE GENERAL
INFORMATION (SF_GI)

STREAM OBJECT INFORMATION
SEARCH POINTER #1 (SOBI_SRP #1)

:

STREAM OBJECT INFORMATION
SEARCH POINTER #n (SOBI_SRP #n)

STREAM OBJECT
INFORMATION #1 (SOBI #1)

:

STREAM OBJECT
INFORMATION #n (SOBI #n)

FIG. 30

OBLON, SPIVAK, ET AL DOCKET #:204591US-2S DIV INV: HIDEO ANDO ET AL SHEET 27_ OF_30_

STREAM FILE GENERAL INFORMATION (SF_GI)

	CONTENTS	NUMBER OF BYTES
(1) SOBI_Ns	NUMBER OF SOBIS	2
(2) SOBU_SIZ	NUMBER OF SECTORS PER SOBU	2
(3) MTU_SHFT	MAPPING TIME UNIT SHIFT	1
(4) RESERVED	RESERVED	1
	TOTAL	6

FIG. 31

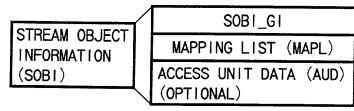
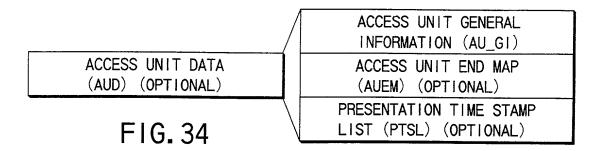


FIG. 32

STREAM OBJECT INFORMATION GENERAL INFORMATION (SOBI_GI)

	CONTENTS	NUMBER OF BYTES
(1) SOB_TY	SOB TYPE	1
(2) SOB_REC_TM	SOB RECORDING TIME	5
(3) SOB_STI_N	SOB STREAM INFORMATION NUMBER	1
(4) AUD_FLAGS	ACCESS UNIT DATA FLAGS	1
(5) SOB_S_APAT	SOB START APAT	6
(6) SOB_E_APAT	SOB END APAT	6
(7) SOB_S_SOBU	FIRST SOBU OF THIS SOB	4
(8) MAPL_ENT_Ns	NUMBER OF MAPPING LIST ENTRIES	4
	TOTAL	28

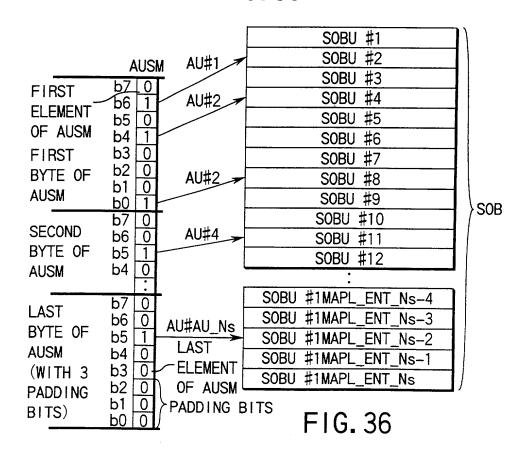
OBLON, SPIVAK, ET AL DOCKET #:204591US-2S DIV INV: HIDEO ANDO ET AL SHEET <u>28</u> OF <u>30</u>



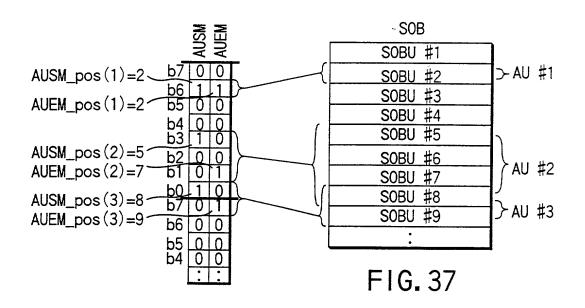
ACCESS UNIT GENERAL INFORMATION (AU GI)

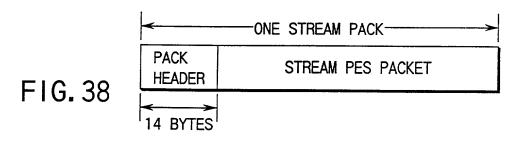
	CONTENTS	NUMBER OF BYTES
(1) AU_Ns	NUMBER OF ACCESS UNITS	4
(2) AUSM	ACCESS UNIT START MAP (MAP_ENT_Ns ELEMENTS)	(MAPL_ENT_Ns+7) div 8
	TOTAL	(MAPL_ENT_Ns+7) div 8 + 4

FIG. 35

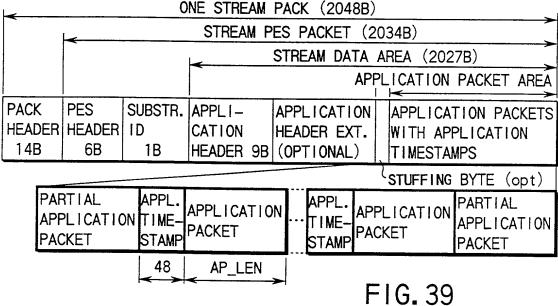


OBLON, SPIVAK, ET AL DOCKET #:204591US-2S DIV INV: HIDEO ANDO ET AL SHEET 29 OF 30





STRUCTURE OF THE STREAM DATA AREA WITHIN A STREAM PES PACKET



OBLON, SPIVAK, ET AL DOCKET #:204591US-2S DIV INV: HIDEO ANDO ET AL SHEET 30 OF 30

APPLICATION HEADER

FIELD	NUMBER OF BITS	NUMBER OF BYTES	VALUE	COMMENT
(1) VERSION	8	1	01h	
(2) AP_Ns	8	1		
(3) FIRST_AP_OFFSET	16	2		
(4) EXTENSION_HEADER_INFO	2		00b, 10b, 11b	-
(5) RESERVED FOR CCI_ESC	1	1	0b 0R 1b	
(6) RESERVED	5		11111b	
(7) SERVICE_ID	16	2		
(8) MAX_BR_LOG2	8	1		
(9) SMO_BS_LOG2	8	1		
	TOTAL	9		

FIG. 40